



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,107	09/12/2003	Harry Bims	1875.7300003	6489
26111 7590 05/13/2010 STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C. 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005				
EXAMINER AJAYI, JOEL				
ART UNIT 2617		PAPER NUMBER		
MAIL DATE 05/13/2010		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

**UNITED STATES DEPARTMENT OF COMMERCE****U.S. Patent and Trademark Office**

Address : COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
10661107	9/12/2003	BIMS, HARRY	1875.7300003

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

JOEL AJAYI

ART UNIT	PAPER
----------	-------

2617

20100503

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner for Patents

This is a supplemental final action correcting typographical errors.

/Joel Ajayi/
Examiner, Art Unit 2617

SUPPLEMENTAL FINAL ACTION

This action is in response to Applicant's amendment filed on March 17, 2010. **Claims 1, 2, 4-17, 19-21, 23-31, and 33-35** are still pending in the present application. **This action is made FINAL.**

Response to Arguments

Applicant's arguments filed March 17, 2010 have been fully considered but they are not persuasive.

The argument features determining within the plurality of repeaters whether wirelessly transmitting first and second packets to the first and second mobile stations, respectively will create interference between the first and second packets, then wirelessly transmits the first and second packets to the first and second mobile stations respectively at different times when it is determined that transmitting the first and second packets will create interference.

The examiner respectfully disagrees with the applicant's statement and asserts that it is well known in the art that transmitting two or more signals at the same time can cause interference (col. 6, lines 31-34), which is why in Briskman the transmissions from the satellites and repeaters, on the same frequency, are orthogonal to each other (col. 6, lines 43-47); and there is a delay in the transmissions (col. 10, lines 20-27).

Tan (U.S. Patent Number: 4,435,804), as an example, also shows that it is well known in the art to determine if packets will cause interference (col. 3, lines 60-64).

The argument features detecting whether overlapping transmissions of the first and second packets will result in interference that would prevent completion of the transmissions.

The examiner respectfully disagrees with the applicant's statement and asserts that it is well known in the art that transmitting two or more signals at the same time can cause interference (col. 6, lines 31-34), which is why in Briskman the transmissions from the satellites and repeaters, on the same frequency, are orthogonal to each other (col. 6, lines 43-47); and there is a delay in the transmissions (col. 10, lines 20-27).

Tan (U.S. Patent Number: 4,435,804), as an example, also shows that it is well known in the art to determine if packets will cause interference (col. 3, lines 60-64).

The argument features determining, at the switch, whether immediately transmitting the packet to the mobile station will cause an interference with other communications destined to the mobile station.

The examiner respectfully disagrees with the applicant's statement and asserts that it is well known in the art that transmitting two or more signals at the same time can cause interference (col. 6, lines 31-34), which is why in Briskman the transmissions from the satellites and repeaters, on the same frequency, are orthogonal to each other (col. 6, lines 43-47); and there is a delay in the transmissions (col. 10, lines 20-27).

Appala et al. (U.S. Patent Number: 6,862,265), as an example, also shows that it is well known in the art for a switch to determine if packets will cause interference and to correct the problem (col. 2, lines 10-37).

In view of the above, the rejection using Briskman is maintained as repeated below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4-8, 15-17, 29-31, 33, and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by **Briskman (U.S. Patent Application Number: 5,864,579)**.

Consider **claim 1**; Briskman discloses a method comprising: configuring a plurality of repeaters operating at a substantially identical communication frequency (SFN) to coordinate transmissions of data packets and thereby function as an access point with respect to first and second mobile stations that are wirelessly communicatively coupled to the plurality of repeaters (col. 6, lines 43-49, 55-67; fig. 1); determining within the plurality of repeaters whether wirelessly transmitting first and second packets to the first and second mobile stations, respectively will create interference between the first and second packets (col. 2, lines 53-65); and wirelessly transmitting the first and second packets to the first and second mobile stations respectively at different times (delay) when it is determined that transmitting the first and second packets will create interference (col. 5, lines 2-9; col. 10, lines 20-27).

Consider **claims 2, 17, 31**; Briskman discloses operating the plurality of repeaters as a communication channel in accordance with a wireless communication protocol (satellites retransmit the f1 signal using f2, which is in the range of .3-3 GHz; this is within the range of e.g. 802.11g) (col. 5, lines 53-56; col. 6, lines 55-67).

Consider **claim 4**; Briskman discloses scheduling, at a switch coupled to the plurality of repeaters, transmissions of the first packet and the second packet to avoid interference that would prevent one or both of the transmissions from being received by the first and second mobile stations (col. 8, lines 7-19).

Consider **claims 5, 16**; Briskman discloses detecting whether concurrent transmission of the first and second packets will cause interference prior to performing the scheduling (col. 2, lines 53-65); and transmitting the first and second packets to the first and second mobile stations without performing the scheduling (the preferable statement creates several opportunities), if overlapping transmissions of the first and second packets will not cause interference (col. 2, lines 53-65; col. 10, lines 20-27).

Consider **claim 6**; Briskman discloses if substantially concurrent transmission of the first and second packets cause interference, the method further comprises: transmitting the first and second packets to the first and second devices respectively according to the schedule (col. 2, lines 53-65; col. 5, lines 2-9; col. 10, lines 20-27).

Consider **claim 7**; Briskman discloses coordinately scheduling at the plurality of repeaters transmissions of the first packet and the second packet to avoid interference that would prevent one or both of the transmissions from being received by the first and second devices (col. 2, lines 53-65; col. 5, lines 2-9; col. 10, lines 20-27).

Consider **claim 8**; Briskman discloses determining whether the first and second packets are to be transmitted substantially simultaneously to the first and second mobile stations (col. 2, lines 53-65); and transmitting the first and second packets to the first and second mobile stations at

different time slots to avoid the interference, if the first and second packets are selected for substantially simultaneously transmission (col. 5, lines 2-9; col. 10, lines 20-27).

Consider **claim 15**; Briskman discloses a method comprising: receiving, at a switch, first and second data packets designated for transmission to a first mobile station and a second mobile station respectively via a plurality of repeaters transmitting on a substantially identical communication frequency (SFN) (col. 6, lines 43-49, 55-67; col. 8, lines 7-19); detecting whether overlapping transmissions of the first and second packets will result in interference that would prevent completion of the transmissions (col. 2, lines 53-65); and scheduling the transmissions of the first and second packets via the plurality of repeaters to avoid the interference if it is determined that overlapping transmissions of the first and second packets will result in interference that would prevent completion of the transmissions (col. 5, lines 2-9; col. 10, lines 20-27).

Consider **claim 29**; Briskman discloses a system, comprising: a plurality of communication devices communicating wirelessly over substantially the same communication frequency (SFN) with one or more mobile stations (col. 6, lines 43-49, 55-67; fig. 1), wherein the plurality of communication devices coordinate transmissions of data packets to function as an access point with respect to the one or more mobile stations (col. 6, lines 43-49, 55-67; fig. 1), the coordinating including determining, at the switch (col. 7, lines 52-56; col. 8, lines 7-19), whether immediately transmitting the packets to the one or more mobile station via the plurality of communication devices will cause an interference with other communications to the one or more mobile stations (col. 2, lines 53-65).

Consider **claim 30**; Briskman discloses that the switch manages communications between the plurality of communication devices and the one or more mobile stations (col. 7, lines 52-56; col. 8, lines 7-19).

Consider **claim 33**; Briskman discloses a method comprising: means for configuring a plurality of repeaters operating at a substantially identical communication frequency (SFN) to coordinate transmissions of data packets and thereby function as an access point with respect to first and second mobile stations that are wirelessly communicatively coupled to the plurality of repeaters (col. 6, lines 43-49, 55-67; fig. 1); means for determining within the plurality of repeaters whether wirelessly transmitting first and second packets to the first and second mobile stations, respectively will create interference between the first and second packets (col. 2, lines 53-65); and means for wirelessly transmitting the first and second packets to the first and second mobile stations respectively at different times (delay) when it is determined that transmitting the first and second packets will create interference (col. 5, lines 2-9; col. 10, lines 20-27).

Consider **claim 34**; Briskman discloses a method comprising: means for receiving, at a switch, first and second data packets designated for transmission to a first mobile station and a second mobile station respectively via a plurality of repeaters transmitting on a substantially identical communication frequency (SFN) (col. 6, lines 43-49, 55-67; col. 8, lines 7-19); means for detecting whether overlapping transmissions of the first and second packets will result in interference that would prevent completion of the transmissions (col. 2, lines 53-65); and means for scheduling the transmissions of the first and second packets via the plurality of repeaters to avoid the interference if it is determined that overlapping transmissions of the first and second

packets will result in interference that would prevent completion of the transmissions (col. 5, lines 2-9; col. 10, lines 20-27).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 9-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Briskman (U.S. Patent Application Number: 5,864,579)**, further in view of **Shanley (U.S. Patent Number: 5,093,927)**.

Consider **claim 9**; Briskman fails to disclose maintaining in a database, information regarding whether communications of one of the plurality of repeaters will interfere with another of the plurality of repeaters.

In the same field of endeavor Shanley discloses maintaining in a database, information regarding whether communications of one of the plurality of repeaters will interfere with another of the plurality of repeaters (column 3, lines 38-63).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the teachings of Shanley into the method of Briskman in order to monitor record interference of the communication resources.

Consider **claim 10**; Shanley discloses examining the first database to determine whether communications of a selected one of the plurality of repeaters will interfere with another of the plurality of repeaters (col. 3, lines 53-63); and Briskman discloses delaying one of the first and second packets to be transmitted by the selected repeater to the respective mobile station if communications of the selected repeater will interfere with another of the plurality of repeaters (col. 10, lines 20-27).

Consider **claim 11**; Shanley discloses periodically transmitting a test packet to collect interference information [actual data is used to collect, the same information, interference information (column 3, lines 38-63)].

Consider **claim 12**; Shanley discloses maintaining in a second database (mass storage) a list of mobile stations and a corresponding plurality of repeaters that last received transmissions from the mobile stations [this will be provided in the interference data collection and historical data (column 3, lines 38-63)].

Consider **claim 13**; Shanley discloses examining the second database (mass storage) to determine whether the corresponding plurality of repeaters associated with the first and second mobile stations, when transmitting substantially currently, will interfere with each other (col. 3, lines 53-63); and Briskman discloses delaying transmissions of one of the first and second packets to the respective mobile station if the transmissions from the corresponding plurality of repeaters associated to the first and second mobile stations will interfere with each other (col. 10, lines 20-27).

Claims 14, 19, 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Briskman (U.S. Patent Application Number: 5,864,579)**, further in view of **Ketseoglou et al. (U.S. Patent Number: 5,732,076)**.

Consider **claims 14, 19**; Briskman discloses the claimed invention except: performing address translation on the first and second packets to determine respective Ethernet MAC addresses based on respective destination IP addresses of the first and second packets; identifying which of the plurality of repeaters is closest to the first and second mobile stations having the respective Ethernet MAC address; determining whether interference will occur between the transmission that would prevent completion of the transmissions; and scheduling the

transmissions of the first and second packets to avoid the interference if interference would occur between the transmissions.

In an analogous art Ketseoglou discloses performing address translation on the first and second packets to determine respective Ethernet MAC addresses based on respective destination IP addresses of the first and second packets (col. 12, line 61 – col. 13, line 14); identifying which of the plurality of repeaters (base station) is closest to the first and second mobile stations having the respective Ethernet MAC address (paging zone) (col. 12, line 61 – col. 13, line 14); determining whether interference will occur between the transmission that would prevent completion of the transmissions (slot quality) (col. 12, line 61 – col. 13, line 14); and scheduling the transmissions of the first and second packets to avoid the interference (time slot) if interference would occur between the transmissions (col. 12, line 61 – col. 13, line 14).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teaching of Briskman by identifying Ethernet features as taught by Ketseoglou for the purpose of providing an efficient communication system.

Consider **claim 26**; Ketseoglou discloses determining a communication device closest to the mobile station (paging zone) (col. 12, line 61 – col. 13, line 14); and scheduling based in part on a location of the closest communication device, the transmission of the packet to the mobile station such that there are no other communications occurring to the mobile station (slot quality is low) (col. 12, line 61 – col. 13, line 14).

Consider **claim 27**; Ketseoglou discloses performing address translation on the packet to determine an Ethernet MAC address corresponding to a destination IP addresses of the packet (col. 12, line 61 – col. 13, line 14); and identifying a communication device associated with the

mobile station having the determined Ethernet AC address as the closest communication device (paging zone) (col. 12, line 61 – col. 13, line 14).

Consider **claim 28**; Briskman discloses the claimed invention except for the address translation is performed via a table stored within the switch. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the teaching of Briskman by including a base station/repeater with a switch that performs the address translation via a table as taught by Ketseoglou (col. 12, line 61 – col. 13, line 14; col. 29, lines 51-65), since it has been held that rearranging parts of an invention involved only routine skill in the art. *In re Japikse*, 86 USPQ 70 (CCPA 1950).

Claims 20, 21, 23-25, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Briskman (U.S. Patent Application Number: 5,864,579)**.

Consider **claim 20**; Briskman discloses a method comprising: receiving, at a switch, a packet destined to a mobile station (col. 7, lines 52-56; col. 8, lines 7-19); determining, at the switch (col. 7, lines 52-56), whether immediately transmitting the packet to the mobile station will cause an interference with other communications destined to the mobile station (col. 2, lines 53-65); and transmitting the packet to a communication device communicatively coupled to the switch (col. 7, lines 52-56; col. 8, lines 7-19), wherein the communication device and other communication devices coupled to the switch transmit at a substantially identical communication frequency (SFN) and coordinate transmissions of data packets, thereby functioning as an access point with respect to the mobile station (col. 6, lines 43-49, 55-67; fig. 1).

Briskman discloses the claimed invention except for distinctly stating that the packet is forwarded wirelessly to the mobile station when it is determined that transmitting the packet will not cause interference. It would have been obvious to one having ordinary skill in the art at the time the invention was made that the preferable statement of Briskman (col. 2, lines 53-65; col. 10, lines 20-27) signifies that the packet will be sent to the mobile station when the transmission will not cause interference, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184.

Consider **claim 21**; Briskman discloses operating the plurality of repeaters as a communication channel in accordance with a wireless communication protocol (satellites retransmit the f1 signal using f2, which is in the range of .3-3 GHz; this is within the range of e.g. 802.11g) (col. 5, lines 53-56; col. 6, lines 55-67).

Consider **claim 23**; Briskman discloses delaying the transmission of the packets to the mobile station if it is determined that an interference would occur (col. 2, lines 53-65; col. 5, lines 2-9; col. 10, lines 20-27).

Consider **claim 24**; Briskman discloses scheduling the transmission of the packet at an alternative time slot where no other communications destined to the mobile station are occurring if it is determined that no interference would otherwise occur (col. 5, lines 2-9; col. 10, lines 20-27).

Consider **claim 25**; Briskman discloses transmitting the packet to the mobile station without delay if it is determined that no interference would occur (the preferable statement creates several opportunities) (col. 2, lines 53-65; col. 10, lines 20-27).

Consider **claim 35**; Briskman discloses a method comprising: means for receiving, at a switch, a packet destined to a mobile station (col. 7, lines 52-56; col. 8, lines 7-19); means for determining, at the switch (col. 7, lines 52-56), whether immediately transmitting the packet to the mobile station will cause an interference with other communications destined to the mobile station (col. 2, lines 53-65); and means for transmitting the packet to a communication device communicatively coupled to the switch (col. 7, lines 52-56; col. 8, lines 7-19), wherein the communication device and other communication devices coupled to the switch transmit at a substantially identical communication frequency (SFN) and coordinate transmissions of data packets, thereby functioning as an access point with respect to the mobile station (col. 6, lines 43-49, 55-67; fig. 1).

Briskman discloses the claimed invention except for distinctly stating that the packet is forwarded wirelessly to the mobile station when it is determined that transmitting the packet will not cause interference. It would have been obvious to one having ordinary skill in the art at the time the invention was made that the preferable statement of Briskman (col. 2, lines 53-65; col. 10, lines 20-27) signifies that the packet will be sent to the mobile station when the transmission will not cause interference, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184.

Conclusion

Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Joel Ajayi whose telephone number is (571) 270-1091. The Examiner can normally be reached on Monday-Thursday from 7:30am to 5:00pm and Friday 7:30am to 4:00 pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

/Joel Ajayi/

Examiner, Art Unit 2617

/LESTER KINCAID/

Supervisory Patent Examiner, Art Unit 2617